

LATCHTOOL

FastFlow® within - Fluid Power without the Complications...

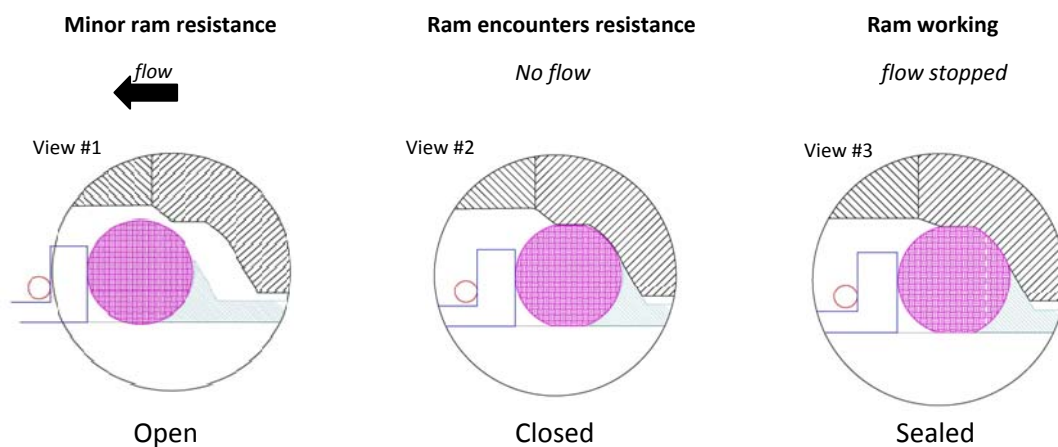
FastFlow® Microhydraulics: *a LatchTool Group Technology...*

FastFlow® fluidic valves...

- Are **dynamic** valves that respond to the annular flow around a moving piston. In the diagram, the piston is pressured from the left, the ram is extending to the right.
- The valve stays open when the upstream pressure is higher than the downstream pressure; the essence of regeneration in a hydraulic circuit.

An Annular Floating Seal Valve consists of

- A rigid ring-stop that floats freely in the annular pathway in one direction and restricts flow in the other.
- An O-ring that floats freely, but when pressures and flow change, is pressed up against the ring-stop to seal the pathway shut
- Springs of different configurations and loads are used to align and bias the o-ring towards its seat and to achieve different effects.



View the [PowerCylinder™ animation...](#) Watch the ring-stop on the ram piston carefully. It is an off-white color with a distinctive shape. Remember the system is closed; the cylinder is filled with fluid.

When initially actuated, the pressure on the rod side of the ram is instantly higher than that on the cap side. This is calculated so because the rod's cross-section subtracts from the backside cross-sectional area of the piston cap.

Fluid pushes the ring-stop and o-ring out of the way. The annular floating seal valve thus opens with displaced fluid flowing to the cap side of the ram; the regenerative circuit. Regeneration continues unabated until the fluid on the rods side is diverted to the accumulator.